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Measurement of prompt  $\psi(2S)$  production cross sections in proton–lead and proton–proton collisions at  $s_{NN}=5.02\text{TeV}$  (Article) (Open Access)

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Abstract

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Measurements of prompt  $\psi(2S)$  meson production cross sections in proton–lead (pPb) and proton–proton (pp) collisions at a nucleon–nucleon center-of-mass energy of  $s_{NN}=5.02\text{TeV}$  are reported. The results are based on pPb and pp data collected by the CMS experiment at the LHC, corresponding to integrated luminosities of  $34.6\text{ nb}^{-1}$  and  $28.0\text{ pb}^{-1}$ , respectively. The nuclear modification factor  $R_{pPb}$  is measured for prompt  $\psi(2S)$  in the transverse momentum range  $4 < p_T < 30\text{ GeV}/c$  and the center-of-mass rapidity range  $-2.4 < y_{CM} < 1.93$ . The results on  $\psi(2S) R_{pPb}$  are compared to the corresponding modification factor for prompt  $J/\psi$  mesons. The results point to different nuclear effects at play in the production of the excited charmonium state compared to the ground state, in the region of backward rapidity and for  $p_T < 10\text{ GeV}/c$ . © 2019 The Author

SciVal Topic Prominence

Topic: collisions | production | nuclear modification

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Author keywords

CMS pPb  $\psi(2S)$

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